REMARKS

Claims 1-20, 22-30 and 34-36 were pending. Claims 1-5, 7-9, 11, 18-20, 34 and 35 were rejected under 35 U.S.C. § 102(b). Claims 6, 10 and 13 were variously rejected under 35 U.S.C. § 103. Claim 34 was rejected under the doctrine of obviousness-type double-patenting. Claims 12, 14-17, 22-30 and 36 were objected to as allegedly being dependent upon a rejected base claim.

By this amendment, claims 9-11, 13, and 18-20 have been canceled, claims 12, 14, and 34 have been amended, and new claims 37-42 have been added without prejudice or disclaimer of any previously claimed subject matter. Support for the amendments can be found, *inter alia*, throughout the specification, including, for example, in the claims as originally filed.

The amendments are made solely to promote prosecution without prejudice or disclaimer of any previously claimed subject matter. With respect to all amendments and canceled claims, Applicants have not dedicated or abandoned any unclaimed subject matter and moreover have not acquiesced to any rejections and/or objections made by the Patent Office. Applicants expressly reserve the right to pursue prosecution of any presently excluded subject matter or claim embodiments in one or more future continuation and/or divisional application(s).

Applicants gratefully acknowledge the Examiner's withdrawal of the previous rejections based on 35 U.S.C. § 112, second paragraph. Applicants also acknowledge the Examiner's statement that no references were found teaching or suggesting claims 12, 14-17, 22-30 and 36.

Applicants have carefully considered the points raised in the Office Action and believe that the Examiner's concerns have been addressed as described herein, thereby placing this case into condition for allowance.

Rejection under 35 U.S.C. §102

Claims 1-5, 7-9, 11, 18-20, 34 and 35 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Tatusov *et al.*(*Curr. Biol.* vol. 6, pp. 279-291 (1996); "Tatusov") as evidenced by Koonin *et al.* (PNAS, vol. 92, pp. 11921-11925, (1995)). Applicants respectfully traverse this rejection.

As an initial matter, claims 9, 11, and 18-20 have herein been canceled, making this rejection moot with regard to these claims.

As amended herein, the claimed invention is directed to a method for identifying a second nucleic acid sequence or second polypeptide sequence of a second protein comprising use of a "domain fusion" method algorithm. The claimed invention is also directed to a method for identifying a second nucleic acid sequence or second polypeptide sequence of a second protein comprising use of a "phylogenetic profile" method algorithm wherein the homology between the proteins is considered significant if the probability (p) value threshold is determined as claimed. The claimed invention is also directed to a method for identifying a second nucleic acid sequence or second polypeptide sequence of a second protein comprising use of a "phylogenetic profile" method algorithm and determining evolutionary distance as claimed.

With regard to the rejection of claim 34, the Examiner states that Tatusov describes both the "phylogenetic profile" method and the "physiologic linkage" method algorithms for comparing the sequences. Without acquiescing to this rejection, as amended claim 34 is directed to the use of a "domain fusion" method algorithm. Applicants respectfully submit that Tatusov does not teach a "domain fusion" method algorithm. Applicants further submit that Tatusov does not teach a method using a "phylogenetic profile" method algorithm as claimed.

For a claim to be anticipated by a reference, the reference much teach each and every element of the claim. Since Tatusov does not teach the invention as claimed, Tatusov does not anticipate the claimed invention.

Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §102(b).

Rejection under 35 U.S.C. §103

Claim 6 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tatusov and Phillipp *et al.* (PNAS vol. 93, pp. 3132-3137 (1996); Phillipp). Claims 10 and 13 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Tatusov and Dandekar *et al.* (TIBS, vol. 23, pp. 324-328, September 1998). Applicants respectfully traverse this rejection.

As an initial matter, claims 10 and 13 have herein been canceled, making this rejection moot with regard to these claims.

With regard to claim 6, Applicants respectfully point out that claim 34, from which claim 6 ultimately depends, has been amended to the use of a "domain fusion" method algorithm. As discussed above, Tatusov does not teach a "domain fusion" method algorithm. Applicants further submit that nothing in Tatusov suggests the use of a "domain fusion" method algorithm. In addition, Phillipp does not provide any teaching or suggestion of a "domain fusion" method algorithm.

The combination Tatusov and Phillipp does not teach or suggest the claimed invention, thus does not render the claimed invention obvious. Neither of the references, either alone or in combination, provide any suggestion or motivation to modify the teachings therein to arrive at the

claimed invention, one which uses a "domain fusion" method algorithm. Further, since they provide no teaching or suggestion of the claimed invention, the cited references do not provide an expectation of success of the claimed invention.

In sum, Applicants respectfully submit that a *prima facie* case of obvious has not been made.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §103.

Rejections Under Obviousness-Type Double Patenting

Claim 34 was rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1 and 2 of U.S. Patent No. 6,466,874, claims 1 and 19 of U.S. Patent No. 6,564,151, and claims 3 of co-pending U.S. Patent Application No. 09/493,401.

Submitted herewith are terminal disclaimers for the instant application with regard to U.S. Patent Nos. 6,466,874 and 6,564,151.

Applicants thank the Examiner for bringing the co-pending application to Applicants' attention. Since this is a provisional obviousness-type double patenting rejection and there are no issued claims, there is nothing to disclaim at this time and this rejection is moot with regard to co-pending U.S. Patent Application No. 09/493,401.

Accordingly, Applicants respectfully request withdrawal of this rejection.

Objections to Claims

Claims 12, 14-17, 22-30 and 36 were objected to as being dependent upon a rejected base claim. The Examiner noted that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Without commenting on the rejection of the base claims, Applicants have herein amended claims 12 and 14 to an independent form and respectfully submit that, as amended, claims 15-17, 22-30, and 36 now depend from allowable claims.

Accordingly, Applicants respectfully request withdrawal of these objections.

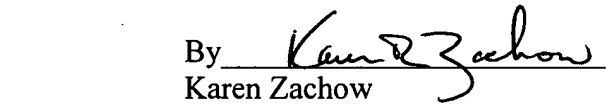
CONCLUSION

Applicants believe that all issues raised in the Office Action have been properly addressed in this response. Accordingly, reconsideration and allowance of the pending claims is respectfully requested. If the Examiner feels that a telephone interview would serve to facilitate resolution of any outstanding issues, the Examiner is encouraged to contact Applicants' representative at the telephone number below.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 2200020659. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: June 30, 2004

Respectfully submitted,

By 

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